SERCULAR

The Indiana State Emergency Response Commission's Quarterly Newsletter Fall 2003

Preventing Chemical Terrorism and Accidents

Questions and Answers on a Chemical Security Act

(Editor's Note: Senator James Inhofe has introduced S. 994, the "Chemical Facilities Security Act of 2003", as a substitute bill for Senator John Corzine's "Chemical Security Act" on which hearings were held in 2001. The issues addressed in the Q & A below regarding chemical plant security from terrorist attack, however, remain the same).

Chemical Facilities Security Act of 2003
(Introduced in Senate as S.994)

SECTION 1. SHORT TITLE.

This Act may be cited as the "Chemical Facilities Security Act of 2003."

SECTION. 2. FINDINGS.

Congress finds that--

(1) industries that manufacture, distribute, and process chemicals are crucial components of the national economy and the critical infrastructure of the United States--

(A) in their own right; and

(B) because those industries supply resources essential to the functioning of other critical infrastructure;

(2) a terrorist attack on a facility that manufactures, processes, or uses potentially dangerous chemicals, or a theft of those chemicals from such a facility for use in a terrorist attack, could pose a serious threat to--

(A) public health, safety, and welfare;

(B) critical infrastructure; and

(C) national security;

(3) to protect public health, safety, and welfare, critical infrastructure, and national security, every reasonable effort should be made to ensure the security of sources of potentially dangerous chemicals against acts of terrorism; and

(4) while programs to protect the health and safety of workers, the public, and the environment by reducing the potential for accidental releases of potentially dangerous chemicals, including the consequences of worst-case releases of those chemicals, are in place as required by numerous Federal and State laws, the events of September 11, 2001, demonstrate the need to ensure that appropriate security measures are taken to address the threat of acts of terrorism against facilities that manufacture, use, or process potentially dangerous chemicals."

Introduced by Senator John Corzine of New Jersey, the "Chemical Security Act" (S.157) was written to protect communities from terrorism and accidents involving hazardous industrial chemicals. This bill represented the first national effort to reduce industrial chemical hazards that endanger nearby neighborhoods, schools, hospitals, senior centers, or other public and business areas.

Senators Corzine, Jeffords, Boxer, and Clinton introduced the Chemical Security Act and held hearings on November 14, 2001.

Q: What is the purpose of a Chemical Security Act?

A: The Chemical Security Act establishes the first federal program to reduce or secure industrial

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Chairman's Corner

by Patrick R. Ralston, Chairman, Indiana Emergency Response Commission

Here we go again. Another Chairman's Corner, another federally declared disaster to report. Holidays have not been kind to us this year. Over the Labor Day weekend , flash flooding affected thousands of people in 21counties. Rain was so heavy that homeowners who had never before been flooded found themselves victims. At press time, with applications for assistance still being received, nearly 4,000 people had applied for help, and $11 million dollars in grants and loans were approved. The July 4th storms resulted in at least $36.8 million in assistance to individuals and $7.8 million to communities in 46 counties.

I want to thank the Washington/ Orange Counties Local Emergency Planning Committee (LEPC) for hosting the September meeting of the Indiana Emergency Response Commission (IERC). Madge Lyle did a great job of setting up the event. I appreciate all of her help as well as that of the local Red Cross chapter for its hospitality, setting up the meeting space, and providing refreshments.

The IERC voted to buy some equipment for Ian Ewusi-Wilson and Kathy Dayhoff-Dwyer to help them with their job of helping you. Pretty soon you will notice them with new computers that will improve efficiency. They are also getting digital cameras to record exercises and training activities.

Joe Bell is continuing to train responders across the state to cope with incidents involving radiological materials. The emphasis is on first recognizing that there is a problem and then using monitoring equipment to determine its extent.

The neutralization of VX at the Newport Chemical Depot is on hold until at least January 29, 2004. It was scheduled to start in October, but a combination of a lawsuit challenging the shipment of the processes' byproduct to a hazardous materials site in Ohio, and refinement of the process itself to further reduce the already tiny amount of VX left in its output has pushed back the date.

Meanwhile, the Chemical Stockpile Emergency Preparedness Program (CSEPP) continues its work to get people living near the facility ready in the unlikely event of an incident at the plant. Senator Evan Bayh convinced the U.S. Army to provide $1.63 million in funding for Vermillion, Fountain, and Parke counties to purchase equipment such as 800 megahertz radios and tow vehicles for decontamination equipment.

On November 17 - 18 the Gilmore Commission will meet to put the finishing touches on its fifth and final report to the President and Congress regarding our assessment of domestic response capabilities for terrorism involving weapons of mass destruction, as well as recommendations for improvement of those capabilities. It has been a privilege to work with such a prestigious panel and to see our work appreciated. Of the 69 recommendations contained in our first three reports, 58 were adopted in whole or in part. The results of the fourth report are still being acted upon.

On September 25th, I chaired the meeting of the Central United States Earthquake Consortium (CUSEC) Board of Directors in Indianapolis. The Board voted to add Alabama as a full member. This is the first time in CUSEC's nearly 20-year history that a state has joined charter members Arkansas, Illinois, Indiana, Kentucky, Tennessee, Mississippi, and Missouri. The expansion is important because new scientific evidence points to potentially damaging earthquakes originating in areas other than the New Madrid Seismic Zone. I want to thank staff members John Steel, Dave Perkins, and Alden Taylor for their assistance as chairs, respectively, of the CUSEC Program Managers, Operations, and Public Information committees.

By the time you read this, the 2003 Emergency Responder Conference will be history. Well before the event, all 150-hotel rooms we blocked out were booked. Look for details in the next SERCULAR. 'Til next time.

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chemicals that can endanger surrounding communities in the event of terrorism or accidents.

Q: Why is a Chemical Security Act needed?

A: Recent terrorist attacks around the world show how hazardous chemical facilities could suffer a worst-case explosion or toxic gas release into surrounding communities. At some 3,000 U.S. facilities, more than 10,000 people live within the facilities' "vulnerability zones" within which they could be hurt of killed in an industrial chemical release; some 700 facilities each put more than 100,000 people at risk. Yet no existing federal law regulates these vulnerability zones in terms of size, chemical intensity, or populations at risk, or even requires companies to assess and consider inherently safer alternatives. What is more, current voluntary industry efforts show almost no measurable progress toward reducing the size of these vulnerability zones.

Q: What would a Chemical Security Act do?

A: A Chemical Security Act would give government the tools it needs to combat chemical terrorism, while taking a flexible approach to encourage innovation. In general, a bill would:

1) Require the EPA Administrator, in consultation with the Attorney General and state and local agencies, to identify high priority industries that use dangerous chemicals based on the threat posed by potential terrorism or accidental release;

2) Make it the legal duty of high-priority industries to reduce chemical hazards to the extent practicable or take steps to secure these hazards and to minimize the consequences of any releases that do occur;

3) Establish a consistent national approach to inherent safety that will encourage companies to reduce hazards first before resorting to expensive add-on security or safety equipment;

4) Provide the EPA Administrator and the Attorney General with the necessary legal authorities to protect the public, including abatement, facility record keeping, site entry, and penalties for non-compliance;

5) Require the EPA Administrator to take long-overdue action to protect the public, and not just rely on voluntary industry efforts.

Q: How would a Chemical Security Act differ from current chemical safety laws?

A: Current laws cover various aspects of chemical safety, but none requires companies to use (or even assess) safer alternatives that *eliminate or reduce* wherever practicable dangerous practices that could send a chemical fire or toxic cloud beyond the plant fence line.

In general:

- In the early 1980s, U.S. chemical safety laws addressed *responding to* spills or emergencies (i.e., the Comprehensive Environmental Response, Compensation and Liability Act);
- By the mid-1980s, U.S. chemical safety laws addressed *preparing for* spills or emergencies (i.e., the Emergency Planning and Community Right-to-Know Act);
- From the 1990s, U.S. chemical safety laws addressed *managing the risks of* spills or emergencies (i.e., the Clean Air Act Risk Management Planning program and the OSHA Process Safety Management program);
- Other laws, such as the Clean Water Act, Safe Drinking Water Act, Resource Conservation and Recovery Act, and Pollution Prevention Act address *routine* pollution, not spills and emergencies from terrorism or accidents.

In short, no federal law directly regulates the vulnerability zones that hazardous chemical facilities impose on surrounding communities. A Chemical Security Act will *reduce or eliminate* these industrial chemical hazards in communities wherever practicable, and ensure that high-priority industries secure and safeguard chemical hazards that cannot be reduced or eliminated.

Q: How will reducing industrial chemical hazards help in the fight against terrorism?

A: Design for prevention can be the very best site security option. What you don't have, can't explode - and doesn't require expensive add-on site security. For this reason, EPA advises companies that, "...eliminating or attenuating to the extent practicable any hazard-

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ous characteristic during facility or process design is generally preferable to simply adding on safety equipment or security measures." (1)

Q: How will the Chemical Security Act reduce our vulnerability to chemical terrorism?

A: The Chemical Security Act directs high-priority facilities to reduce their vulnerabilities to chemical terrorism *"to the extent practicable"* by:

First, using *inherently safer technologies* that eliminate or reduce the possibility of a serious chemical fire or release;

Second, for vulnerabilities that cannot be reduced or eliminated, adding *well-maintained secondary containment, control, or mitigation equipment;*

Third, for vulnerabilities that remain, improving *site security and employee training;*

Fourth, as a last resort, establishing *buffer zones* that keep extremely hazardous chemicals away from vulnerable populations (and vice versa).This prevention hierarchy covers all bases and in all cases will identify feasible measures to protect communities and the environment - without forcing companies to use any particular technology.

Q: The Environmental Protection Agency and the Federal Emergency Management Agency already coordinate emergency response - why doesn't that fix the problem?

A: These agencies coordinate emergency *response.* In contrast, a Chemical Security Act would *reduce the possibility* of toxic spills "to the extent practicable" *before* a chemical release ever occurs. In common terms:

* An ounce of prevention is worth a pound of cure - safer technologies can avoid the need to respond and clean up after spills;

* Better safe than sorry - reducing unnecessary chemical hazards can prevent deaths, injuries, and evacuations;

* Don't put all your eggs in one basket - start with prevention and use all approaches, not just response *after* spills and emergencies.

Q: Aren't OSHA's Process Safety Management (PSM) and EPA's Risk Management Planning (RMP) programs intended to prevent catastrophic chemical releases?

A: These laws don't deal with many chemical spills, let alone terrorism. For example, one review examined 167 U.S. deadly chemical accidents that together killed over 100 people - and found that *over half of the chemicals involved are not currently covered by PSM or RMP.(2)* Further, while both programs help firms identify hazards, neither program includes any requirement that companies consider safer alternative chemicals or processes. In addition, neither program considered terrorism prevention when selecting covered chemicals, thresholds, or processes. In 1995, EPA considered adding inherent safety requirements to the RMP program, but then failed to act.

Q: What objections are raised to the Chemical Security Act?

A: Chemical industry lobbyists and their most rigid allies in Congress have long sought to restrict public right-to-know about potential catastrophic spills. They argued that unrestricted disclosure would lead terrorist to target their facilities. The reality, however, is that terrorists can get information from any number of sources. The real danger is the chemicals themselves, which is why hazard reduction is needed. Faced with the actual chemical security requirements of the Chemical Security Act, however, the chemicals lobby is once again working against making plants inherently safer. Here are some of their arguments against reducing chemical hazards:

Objection: The bill makes terrorist attack victims into "criminals."

No, the bill requires companies to secure their chemicals against intrusion, theft, or criminal release. A showing of negligence is necessary before a company is held responsible for security lapses. Since terrorism at a chemical plant involves such extraordinary hazards, it is necessary to prosecute companies that fail to meet security regulations. In the words of Edward Munoz, a former managing director of Union Carbide, India (before the Bhopal chemical leak killed thousands of people), "...if you do something that is

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FIELD NOTES

by Ian Ewusi-Wilson and Kathy Dayhoff-Dwyer

To date, several counties have taken full advantage of the hands-on CAMEOfm workshops we have been conducting throughout the state. We want to thank the personnel who have provided support and coordination in hosting these workshops in the following counties: Allen, Boone, Clay, Dekalb, Dubois, Elkhart, Franklin, Grant, Hamilton, Huntington, Kosciusko, Lake, Marshall, Miami, Porter, St. Joseph, Warren, and Warrick. It should be noted that participants at these workshops have included officials/members of LEPCs, EMAs, fire departments, and hazmat teams from the host counties, as well as officials/members from Adams, Carroll, Cass, Jasper, LaGrange, Montgomery, Newton, Pulaski, Tippecanoe, and Whitley Counties. We are looking at extending the workshops to all other counties and other emergency response organizations that may benefit from using CAMEOfm.

As most of you already know, the CAMEOfm software is a planning tool that was developed by the federal government for use by emergency response agencies across the nation. The software is offered at no cost and without copyright restrictions for its users.

Following are the basic modules or components of CAMEOfm:

Chemical Module - This module contains a library of information on 6,080 pre-selected chemicals. The various chemical characteristics/properties, synonyms, and response information data sheets (RIDS) for each of these chemicals are provided. The chemical library can be linked to the facilities in the facility module by the specific chemical stored at the facility.

Facility Module - This module provides the mechanism for data management of regulated and/or non-regulated facilities in a region/area of concern. Users can input, edit or evaluate facility information, such as contacts, location and chemical storage, at a glance.

Enhancement Modules - These modules allow users to record and maintain records on facility incidents, primary/secondary/evacuation routes, facility/county resources, screening and scenarios of threat zones, and county-designated special locations.

Mapping Applications for Response, Planning, and Local Operational Tasks (MARPLOT) This is the mapping application that allows users to "see" their data (e.g., roads, facilities, schools, response assets), display this information on computer area maps, and print the information. The areas contaminated by potential or actual chemical release scenarios from selected facilities can be overlaid on the maps to determine potential impacts. The maps are created from the U.S. Bureau of Census TIGER/Line files and can be manipulated quickly and easily to show possible hazard areas.

Areal Locations of Hazardous Atmospheres (ALOHA) - ALOHA is an atmospheric dispersion model used for evaluating releases of hazardous chemical vapors. ALOHA allows the user to estimate the downwind dispersion of a chemical cloud, based on the toxicological/physical characteristics of the released chemical, atmospheric conditions, and specific circumstances of the release. Graphic outputs include a "cloud footprint" that can be plotted on maps with MARPLOT to display the location of other facilities storing hazardous materials, as well as any vulnerable locations, such as hospitals and schools. Specific information about these locations can be extracted from any of the CAMEO modules to help make decisions about the degree of hazard posed.

Other planning and response tools that work to enhance the CAMEOfm software are LandView, the software that provides federal environmental and census data on maps, and Tier II Submit, the software that allows facilities to make electronic Tier II submissions.

We are offering workshops in CAMEOfm to

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inherently dangerous and somebody does something foolish with it, you are still responsible for doing what was inherently dangerous."

Objection: A voluntary effort is sufficient to protect against terrorist attacks.

No, we need a national response to potential terrorism, not just voluntary self-assessments by local facilities. For example, if site security at airports were voluntary, it would not work well or make Americans feel safe. Further, a survey of nearly 200 major chemical companies found only three that had developed *measurable goals* and *timelines* to reduce worst-case vulnerability zones.(3)

In addition, the chemical industry claims that its own voluntary standards are not intended to supplant regulations: "We don't want anyone to say, 'We don't need this regulation, because we have Responsible Care'," said the chemical manufacturer's Don Evans; "We don't view the [Responsible Care] program as a shield [against regulation]".(4)

Finally, recent voluntary industry site security guidelines lack standards, timelines, or measurable hazard-reduction goals. They contain no third-party verification and are not enforceable. They dismiss the need to address potential worst-case releases - even after September 11 - and assume that terrorists or accidents will not cause add-on protection equipment to fail (e.g., if an airplane crashes into a plant). They don't address the added security risks of contract workers. They don't apply margins of safety. They don't weigh security costs against safer design. They neglect inherent safety options that can reduce hazards and reduce security needs. They don't include materials accounting methods to help identify theft. They don't account for security costs imposed on police, fire fighters, and local governments. They don't address anonymous chemical sales on the Internet. In short, they are not designed to protect public health and safety.

Objection: It's the government's job to prevent terrorism - this bill puts the government's job on industry.

No, it is impossible for government to predict and prevent *all* possible terror attacks, chemical theft, site intrusion, etc. The chemical industry needs to acknowledge this and act accordingly. General knowledge of a possible terror attack is enough to require prudent safety actions even without specific knowledge of an impending specific attack.

Objection: Congress should let the new Office of Homeland Security take care of national security. No, the Office of Homeland Security has quite limited resources and authority. Further, Congress has a duty and obligation to make the laws that instruct the executive branch regarding what to do.

Objection: ***Now is not the time for new regulations on industry.***

Contrast the words of EPA Assistant Administrator Marianne Horinko about the need to protect water supplies: "Clearly, the Administrator is adamant that EPA's efforts to help secure the safety and integrity of American's water supply and infrastructure must be undertaken with great speed, energy, and attention. Deadlines that were established before September 11th for action are no longer appropriate. We have no time to waste…"(5) Public interest organizations have long advocated for hazard reduction at chemical plants; the risk of terrorist attacks makes this need all the more evident and urgent.

Notes:

1. U.S. Environmental Protection Agency, "Chemical Accident Prevention: Site Security," EPA-K-550-FOO-002, February 2000.
2. U.S. Chemical Safety and Hazard Investigation Board, "Reactive Chemicals Hazard Investigation" presentation, November 2001.
3. Working Group on Community Right-to-Know, et al; "Hazard Reduction Challenge" survey; for the list of companies, see www.rtknet.org/wcs.
4. Chemical Marketing Reporter, "What's in a Logo," January 6, 1992.
5 Statement of Marianne Horinko, Assistant Administrator, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, before the Senate Committee on Environment and Public Works, November 1,2001.

Version 12-23-01, prepared by:
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Air Cleaners Add Safety to Shelter-in-Place Rooms

Portable air cleaners that can filter out toxic gas are making shelter-in-place safe rooms even safer.

At least that's the case for people in Irrigon, OR, and Anniston, AL. They live and work near U.S. Army chemical weapons storage sites. The nation's chemical weapons are scheduled to be destroyed by 2007 although the deadline will likely be extended until at least 2012.

Funded by the Army, the Federal Emergency Management Agency operates a Chemical Stockpile Emergency Preparedness Program (CSEPP) to work with local emergency management agencies and residents during the destruction project. Residents are taught to shelter in place in safe rooms in case of a leak from a site.

"Certain air cleaners provide an additional measure of safety for safe rooms," said Jan R. Taylor, Ph.D. As part of the CSEPP outreach program, Dr. Taylor visited Irrigon to help tell residents how to use the units.

"If a toxic gas should seep into a safe room, the proper air cleaner can quickly reduce gas concentrations and significantly lower risk," she said. Another way to look at it, Dr. Taylor said, is that the filter effectively allows people to shelter in place safely for a longer period of time.

Since July 2002, the Morrow County, OR, CSEPP has supplied Honeywell air cleaners free to 700 homes and public buildings in Irrigon and surrounding communities. Another 500 units will be passed out in August. Residents had received shelter-in-place kits earlier.

The CSEPP program for Anniston initially is distributing 20,000 air cleaners made by Austin Air. At the same time, residents receive shelter-in-place kits and a clear plastic hood that protects wearers from contact with chemical vapors. A battery-powered fan in the hood filters air through an activated carbon filter, much like a gas mask. Residents are being trained to use the protective gear.

After tests on nationally distributed portable air cleaners, the Army reported that units made by Honeywell, Austin Air, AllerAir and Dust Free were the most effective in removing simulated toxins. They removed 90 percent of a vapor concentration in less than 36 minutes.

In later tests of Honeywell units only, one model removed 90 percent of a gas similar to mustard gas in 15 minutes. Mustard gas and nerve agents are stored at the CSEPP sites.

The Honeywell unit being passed out at Irrigon, has three filters for everyday use - a pre-filter, a HEPA filter that removes dust particles, and a 6-pound carbon filter to remove gas, odors, and volatile organic compounds. It is designed for places such as restaurants, bars and hospitals.

If a chemical were to escape from the Umatilla site, residents have been told to replace the HEPA particle and carbon filters with a single emergency module. The I8-pound module is made of activated carbon and other chemicals to absorb toxic gasses.

The emergency module comes sealed separately in a plastic bag for storage. It has a five-year shelf life and can be put in the unit in two to three minutes in an emergency.

"We have had nothing but positive comments about the program," said Casey Beard, director of Morrow County Emergency Services.

"We learned from a recent drill that owners mentally went through the steps of replacing the normal filter with the emergency module when they heard the siren," Beard said. People have also reported a great reduction in allergy symptoms in everyday use, he said. Honeywell states that the unit circulates air at the rate of 300 cubic feet per minute.

The units Morrow County CSEPP passed out cost $325 each. The Army, through FEMA, is footing the bill.

The Morrow County CSEPP is also providing commercial-size, ceiling mounted air filters for public buildings that have safe rooms.

Units have been or will be installed in the Morrow County Courthouse Annex, Irrigon, Oregon Medical Clinic, a Union 76 gas station and food mart, the Bank of Eastern Oregon, a Keggler's supermarket, Gregg's Tavern, and the Irrigon post office.

For more information about portable air cleaners, the Army's tests of air cleaners, and the CSEPP programs, visit the Shelter in Place Information Center at www.nicsinfo.org. (*From nics**news**, Summer 2003*)

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encourage its application because it offers to various agencies, such as LEPCs, easy-to-use tools for accomplishing the following tasks:

- Maintaining records/inventories of chemicals at facilities (Tier II data)
- Tracking emergency planning resources and contacts, and special locations such as schools and hospitals
- Estimating airborne pollutant concentrations downwind from the source of a spill
- Ploting screening and scenarios threat zones
- Developing a Hazardous Materials Emergency Response Plan

Let's take a moment to revisit the nine planning elements of the LEPC Hazardous Materials Plan to determine CAMEOfm's contributions:

1. Identify facilities and transportation routes of extremely hazardous substances (EHS)
2. Describe emergency response procedures, on-site and off-site
3. Designate community emergency coordinator (CEC) and facility emergency coordinators (FECs) to implement the LEPC plan
4. Outline emergency notification procedures
5. Describe methods of determining the occurrence of a release and the probable affected area and population
6. Describe community/industry emergency equipment/facilities, and the responsible persons
7. Outline evacuation plans/routes
8. Describe training programs for emergency response personnel (including schedules)
9. Present methods and schedules for exercising emergency response plans

Our evaluation shows that CAMEOfm's contribution to developing and documenting the nine planning elements in your LEPC plans are as follows:

- The "chemical library" addresses elements 1, 8, and 9.
- In the facilities module, "chemical inventory" addresses elements 1, 8, and 9; contacts addresses elements 3 and 4.
- In the enhancement module, "incidents" addresses elements 2, 3, and 4; "routes" addresses elements 1 and 7; "resources" addresses elements 3, 4, 5, and 6; "screening and scenarios" addresses element 5; "special locations" addresses element 5.
- ALOHA addresses elements 1, 5, 8, and 9.
- MARPLOT addresses elements 1, 5, 8, and 9.

We hope this clarifies what CAMEOfm can do for you and answers some of the questions you may have had regarding its use. If you haven't participated in a CAMEOfm workshop, we hope you will. If you would like to participate in and/or host one of these workshops, or if you have any questions, please feel free to contact either one of the IERC field representatives, and we will set you up or track down answers for you.

We hope to hear from you.